The Booth Tube Design

The Design Concept

Stated as a design concept:

> *The Booth Tube is a plantable seedling container designed for short duration, high density growing that promotes taproot development and provides post-planting protection from the natural environment.*

The Booth Tube

The Booth Tube consists of a translucent tube of the dimensions 0.5" x 0.5" x 8" with an open top and bottom (**Figures 5 and 7**). Prototype containers were constructed from non-UV protected polyacrylamide while biodegradable plastics and paper materials are proposed as research materials in Phase II. The Booth Tubes are arranged in a commercially available Zipset 12" x 12" x 6" growing tray (**Figure 6**) which allows for a density of 576 seedlings per square foot. The Booth Tube is partially filled with growth media to within one inch of the top of the container in order to allow for a protective edge which provides a "greenhouse effect" upon outplanting. This greenhouse edge is integral to the Booth Tube concept. Plant materials are grown for a period of 3-4 weeks following the emergence of the seedling. Care is taken to prevent extensive root extrusion and subsequent air pruning of the taproot prior to outplanting. Plants are outplanted at the approximate onset of the first true leaves. As a plantable container, the entire container with plant material is placed into the soil. Due to their hard sides, Booth Tubes are intended to be machine or hand-planted.

Figure 5. The Booth Tube.

Figure 6. Bundled Booth Tubes in holding tray.

Figure 1. Bingham Canyon study site.

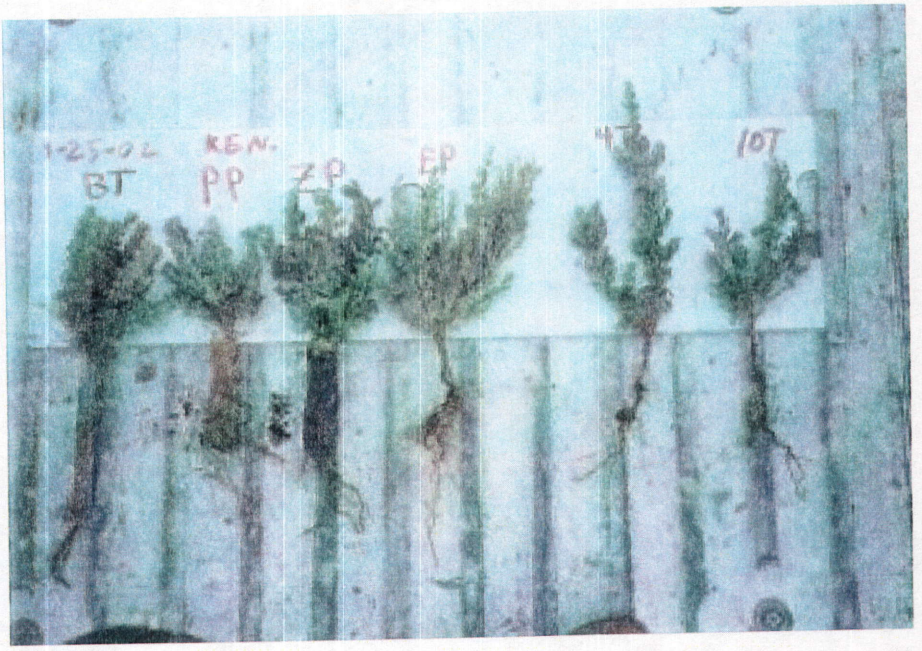

Figure 2. Comparison of outplanted stock by container type at Bingham Canyon study site.

Figure 3 – Upper Midas Dump 150-ft High Angle of Repose Slope before Recontouring (Looking North)

Figure 4 – Upper Midas Dump 150-ft High Slope After it was Reduced to about 2.75:1 (Looking North)

Figure 5 – South Side of Mine Access Road at an Approximate Elevation of 6560 ft Above Mean Sea Level (Looking Southwest). Note Leach-Water Impacted Remnant Hillside in Background.

Figure 6 – South Side of Mine Access Road after Debris Removal and Recontouring has been Completed (Looking Southwest).

Figure 7 – Seedlings were planted on Galena Gulch after it was cross-ripped, fertilized and seeded.